The Evaluation of anti streptococcus mutans properties of containing and free fluoride sealants

Abstract

Introduction: Dental caries is a widespread, chronic, infectious disease that affects the hard tissues of teeth. Sealants has been used as a deterrent for decay in pit and fissures. The purpose of this study was to determine the anti-mutans properties of fluoride-containing sealants compared to fluoride-free sealants.

Materials and Methods: In this study, anti-Streptococcus mutans properties of fluoride-free and fluoride-containing dental Sealants were evaluated by spectrophotometer test. The sealants were sealed to the 300-microlitre microplate walls and exposed to floated bacteria in a liquid culture medium after being cured by a light cure instrument. Then, at 3, 24, and 48 hours, the absorption spectra of the medium were recorded by spectrophotometer.

Results: The results showed that the number of bacteria grown in direct contact, 3 hours after the start of cultivation, had less colonies in Medental and 3M sealants in comparison fluoride-free sealant MasterDent that this difference was significant. In 24-hour post-cultivation, the number of colonies grown in a fluted seals containing 3M was lower than that of MasterDent and Medental that this difference was significant. In the 48-hour culture study, colonies in the MasterDent sealant were lower than Medental and 3M but this difference wasn`t significant.

Conclusion: The results of this study demonstrated that fluoride-free Sealant MasterDent have a lower anti-Streptococcus mutans effect in 3 hours than fluoride-containing sealant Medental. and there was significant difference in anti-Streptococcus mutans properties among fluoride-containing sealant 3M and MasterDent in every three period of time.

Keywords: Streptococcus mutans, fissure sealants, fluoride